Overview

- **What constitutes a “virtual environment”?**
- **What problems demand a virtual environment interface?**
- **What are the important issues in designing and building virtual environment interfaces?**

Virtual Environment Definitions

Why is this important?

- **A Computer-Generated, 3D Spatial Environment in Which Users Can Participate in Real-time**
- **Virtual Environments Can Be**
  - Fully Immersive, Encompassing Worlds
  - Augmentations (Overlay) to the Real World
  - “Through the Window” Worlds (Non-immersive)
- **Many names for the same thing**
  - Artificial reality, Cyberspace,Virtual Reality, Virtual Worlds, Virtual Environments, Synthetic Environments

Telepresence

- **There are two kinds of telepresence:**
  - Real-time telepresence:
    - A visual virtual world that you interact with. - Interactions are reflected in the movement of some real world object. i.e. a DataGlove being moved to control a robot hand that moves at the same time.
  - Delayed telepresence:
    - A visual virtual, world that you interact with while recording the interactions.
    - When you are satisfied with the results, play the interactions across your communications delay.

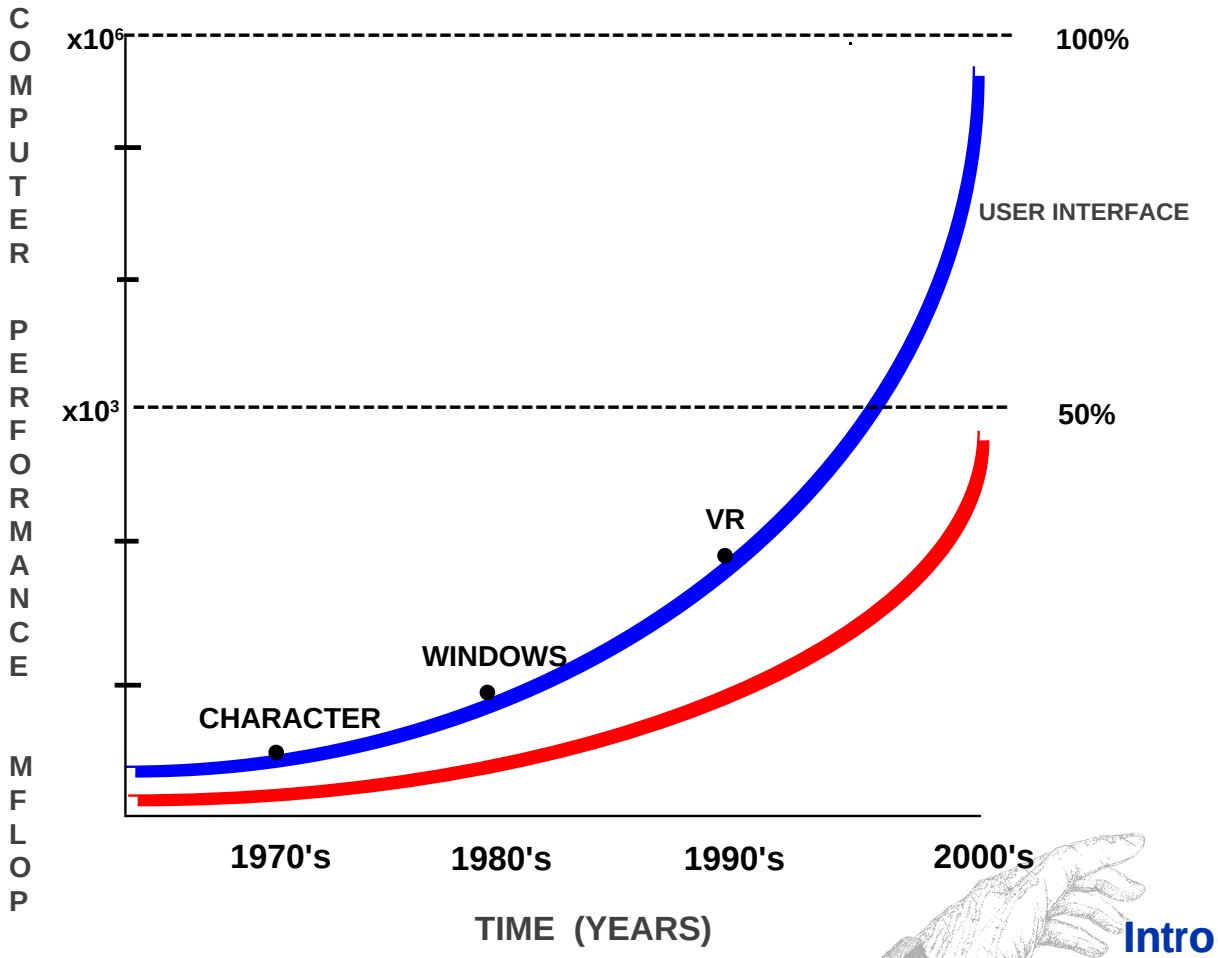
What is “immersion”?

- **What is “presence”?**
- **Is this an important distinction or is human performance the only relevant evaluation criteria?**
  - Depends on whether or not “presence” can be quantified and related to performance

Why an immersive interface?

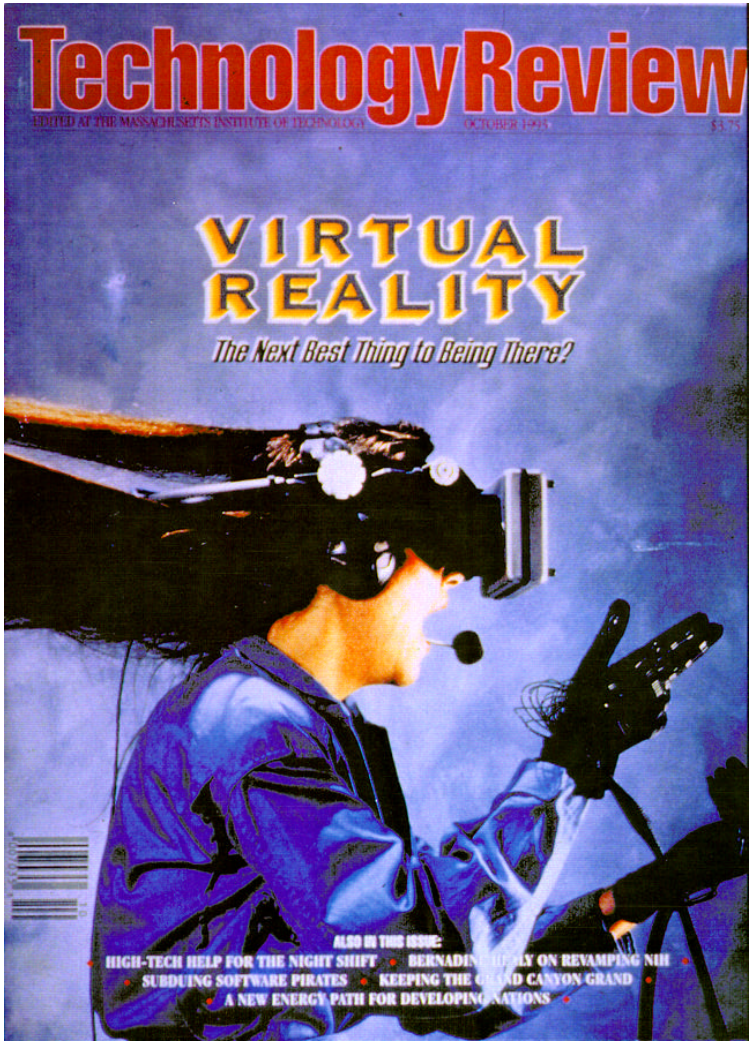
- **The environment encompasses large virtual spaces**
- **A large number of parameters are to be manipulated by the operator**
- **Tasks are of a hands-busy nature**
- **Perspective is important**

Times are changing



Where did all the hype come from?

video



Introduction to Virtual Environment Technology

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